

ANDREW T. BUCCILLI

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EXPERIENCE

- **University of Alabama** Tuscaloosa, AL
Graduate Research Assistant Aug 2012 - May 2019
 - **Data analysis:** Ph.D. research as member of 4000+ person CMS Collaboration at the CERN LHC analyzing PBs of data recorded by the CMS detector
 - **Collaboration:** Member of 5 statistical analysis teams searching for new physics and manager of a new 3 year long project, leading the analysis to publication (see, doi:10.1103/PhysRevD.98.092001)
 - **Data reduction:** Wrote dedicated analysis packages for reducing data to GBs on remote computing clusters distributed across a worldwide HPC grid
 - **Signal optimization:** Improved (photon) particle identification by up to 50% in analysis region over standard procedure
 - **Simulation:** Reduced fake signals to percent level by tuning custom tagging algorithms in samples produced from Monte Carlo simulation
- **European Organization for Nuclear Research (CERN)** Geneva, Switzerland
Graduate Research Assistant Jan 2016 - Aug 2017
 - **Detector operations:** Regular 24/7 on-call expert for the CMS detector responsible for promptly addressing problems with flexibility and coordinating daily activity
 - **Detector performance:** Performed a data analysis to synchronize all 3500 new detector readout channels for production use in 2016 and 2017

EDUCATION

- **Ph.D., Experimental Particle Physics**, The University of Alabama, Tuscaloosa, May 2019
Dissertation: “*Search for Signatures of Large Extra Dimensions in High-Mass Diphoton Events from Proton-Proton Collisions at $\sqrt{s} = 13$ TeV with CMS*”
Advisor: Prof. Conor Henderson
- **M.S., Physics**, The University of Alabama, Tuscaloosa, May 2016
- **B.S., Mathematics**, Michigan Technological University, April 2011

SKILLS

- **Computing:** Python, C++, bash, git, L^AT_EX, SQL, HTML, Unix, Jupyter notebook, Matlab, Mathematica, Excel VBA
- **Libraries:** NumPy, pandas, SciPy, scikit-learn, Matplotlib, STL, CERN ROOT
- **General:** Collaborative and independent research, data analysis, programming, machine learning, effective technical and non-technical communication, writing publications, public presentations, project management, leadership, teaching, mentoring
- **Language:** English (native), Chinese (beginner: ~HSK3), French (basic)